REMARKS/ARGUMENTS

This Amendment is submitted in response to the Office Action mailed March 25, 2008.

I. Introduction

Claims 39-44 have been added so that the application includes claims in a variety of formats. Support for the new claims can be found in the figures and elsewhere in the original application. In addition to adding various new claims, claims 18-25 have been canceled without prejudice to minimize the additional claim fees due in view of the addition of the new claims.

In view of the amendments, claims 1-17 and 26-44 are now pending in the application.

Claims 1-11, 13, 14 and 16-38 stand rejected. Claims 12 and 15 stand objected to for depending from a rejected base claim but were indicated to be directed to allowable subject matter.

Claim 12 has been rewritten in independent form thereby placing it in condition for allowance.

As will be discussed below, none of the pending claims are anticipated or rendered obvious by the applied references.

II. The Rejections Under 35 USC 103 have been Overcome

1. Discussion of Various Exemplary Embodiments

Various exemplary embodiments are directed to a novel method of encoding acknowledgement information in an

acknowledgment signal which can be a positive acknowledgement (ACK) or a negative acknowledgement (NACK).

As discussed in the summary of the application, in some embodiments where decoding is successful, an ACK (acknowledgment) signal is transmitted to the device from which the successfully decoded signal was received. However, when decoding is unsuccessful one of a plurality of possible NAK values may be communicated. As discussed NAK signals may assume any of a plurality of values, e.g., values in a set of pre-selected values or a value in a range of continuous values. The value of a NAK signal is used to convey information useful in determining the amount of redundant information that should be transmitted to facilitate decoding of the originally transmitted information signal. (See Summary pages 3-4)

Novel methods of efficiently and reliably communicating ACK and various possible NAK signal values are described in the application with regard to various Examples. For example, in order to increase the chance that an ACK will not be confused for a NAK, in one embodiment in which multiple NAK signal values may be communicated, each NAK signal value, in the plurality of NAK signal values, differs from any other one of the NAK signal values in said plurality by an amount which is less than the smallest amount any one of said NAK signal values differs from said ACK signal value. Thus, in such an embodiment ACK can be readily distinguished from NAKs but a number of NAKs can still be supported.

In some embodiments, phase is used in communicating the ACK and NAK signal values. For a better understanding of such an embodiment, Applicant suggests the Examiner

review Figure 9 and the corresponding text found on pages 30-31 of the application.

While the above discussion is not intended to limit the scope of the claims and refers to various examples described in the application, an understanding of various exemplary embodiments can facilitate an understanding of various features and distinctions relative to the applied references. **As will be discussed further below the applied references fail to disclose the novel NACK signal value encoding methods described in the present application.**

2. The Applied Reference Fails to Anticipate or Render Obvious Any of the Pending Claims

In the Office Action the Examiner rejected claims 1-11, 13, 14, and 16-38 under 35 USC §103 based on a combination of Hwang (US 2002/0060997 A1) in view of Nagase (U.S. 6,904,555). Accordingly, each of the art based rejections depends on the Examiner proposed combination of reference.

The applied references, when considered alone or in combination fail to disclose the novel NACK and/or ACK signal values recited in various pending claims.

For example, representative claim 1 is patentable because, as amended, it recites, among other things, the features indicated in bold below:

> A communications method, the method comprising:
> operating a first communications device to:
> perform a decoding operation on a first signal including encoded signal information;

> determine if the encoded signal information included in the first signal was successfully decoded;
>
> when it is determined that said encoded information was successfully decoded, generating an ACK signal having an ACK signal value; and
>
> when it is determined that said encoded information was not successfully decoded, generating a first NAK signal having one of a plurality of possible NAK signal values, **each NAK signal value, in the plurality of NAK signal values, differing from any other one of the NAK signal values in said plurality by an amount which is less than the smallest amount any one of said NAK signal values differs from said ACK signal value,** each of said plurality of possible NAK signal values corresponding to a different level of decoding success.

The Hwang reference and Nagase reference alone or in combination do not disclose the recited feature that:

> each NAK signal value, in the plurality of NAK signal values, **differing from any other one of the NAK signal values in said plurality by an amount which is less than the smallest amount any one of said NAK signal values differs from said ACK signal value**

As discussed above, this feature facilitates distinguishing between ACK and NACK signals as compared to distinguishing between different NAK signals. The recited feature is not taught or suggested by the applied references.

In rejecting original claim 3 the Examiner argued:

> It is inherent in Hwang's system that the ACK and NAK signals will be different to differentiate between a successful or failed transmission. In paragraph 52 Hwang describes performing retransmission

> according to the retransmission request. (Office Action p. 3)

It is respectfully submitted that claim 1 requires more than simply the ACK and NAK signals being different. **The applied references are devoid of the above quoted features. In the cited portion of the Hwang reference there is no discussion of the relative difference between ACK and NACK signals as compared to the difference between NAK signals.** Accordingly, it should be appreciated that it does not anticipate or render obvious the subject matter of amended claim 1 or any of the other pending claims.

In view of the above remarks, it is respectfully submitted that claim 1 is patentable over the applied references. **All of the claims rejected under 35 USC §103,** as well as the new claims, **are patentable for the same or similar reasons that claim 1 is patentable.**

3. Additional Reason Dependent Claim 4 is Patentable

The applied references do not teach, disclose or suggest using **phase** to communicate NAK signal values. Accordingly, dependent claim 4 is patentable for the additional reason that it recites:

> …wherein said NAK and ACK signals are complex signals and wherein **said NAK signal values and said ACK signal values are *phase* values.**

In rejecting claim 4 the Examiner states:

> Regarding claim 4, Hwang teaches (paragraph 80) NAK and ACK signals are complex signals and wherein said NAK signal values and said ACK signal values are phase values. (Office Action page 3)

Paragraph 80 of Hwang states:

> [0080] In the ARQ system having the Hybrid type, the data of a block enters a CRC encoder and passes a puncturing code encoder. Therefore, an incremental code word is generated. The code word selected for transmission is interleaved and forms the channel block of Lc length, after the channel block is modulated and transmitted to fading channel. The selection of the encoding rate and the signal power offset and the number of the multi-codes transmission at the time of each transmission depends on feedback signals (ACK/NAK). The receiver consists of a decoder and CRC decoder, and appropriate feedback signals (ACK/NAK) are determined according to the comparison result of the received quality and the target quality.

A review of paragraph 80 of Hwang reveals that the paragraph does not mention the use of complex signals or phase values. In fact a word search of the Hwang reference reveals that **the words complex and phase do not appear anywhere in the Hwang reference and are clearly not present** in **paragraph 80. Since the reference relied upon to reject claim 4 does not disclose the features for which it is cited, the rejection of claim 4 and the claims which depend there from should be withdrawn for this additional reason as well.**

IV. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the pending claims are in condition for allowance. Accordingly, it is requested that the Examiner pass this application to issue.

If there are any outstanding issues which need to be resolved to place the application in condition for

allowance **the Examiner is requested to call (732-542-9070) and schedule an interview with Applicant's undersigned representative**. To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136 is hereby made and any required fee in regard to the extension or this amendment is authorized to be charged to the deposit account of Straub & Pokotylo, deposit account number 50-1049.

None of the statements or discussion made herein are intended to be an admission that any of the applied references are prior art to the present application and Applicants preserve the right to establish that one or more of the applied references are not prior art.

Respectfully submitted,

June 25, 2008

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I hereby certify that this paper (and any accompanying paper(s)) is being facsimile transmitted to the United States Patent Office on the date shown below.

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June 25, 2008
Date